Harford County Government Department of Public Works

Common Pond Maintenance Descriptions

Dam:

- Vegetation
    - A thorough grass cover or other form of accepted stabilization must cover all slopes of the dam as well as the cut slope in order to prevent erosion into the pond.
    - The length of the ground cover in a stormwater management pond should fall into the range of four to six inches, which will prevent erosion but still allow sunlight to filter through and sustain the ground cover.
    - Dams in stormwater ponds must be mowed to the toe, or the point where the slope meets natural flat ground.
    - Absolutely no woody vegetation may be found on any portion of the dam.
    - While found in several stormwater ponds in Harford County, crown vetch is not an acceptable ground cover.
- Animal Burrows
    - Under no circumstances should animal burrows be allowed on the dam. Animal burrows create cavities that jeopardize the structural strength of the dam as well as providing a break in ground cover that can erode into the pond.
    - In the event that an animal burrow does form on the dam, the animal must be removed, the hole must be filled with a mixture of 90% earth and 10% cement, and permanent stabilization (grass) must be applied.
- Slope Failures: Slumps, Shears, and Cracks
    - Slumps, shears, and cracks, or slope failures can be indicative of a serious problem with the pond. These problems are not to be confused with erosion, which usually occurs on a smaller scale.
    - IN THE EVENT ANY DEPRESSIONS OR CRACKS OCCUR ON THE DAM IN A STORMWATER FACILITY PLEASE NOTIFY HARFORD COUNTY STORMWATER **IMMEDIATELY**!

Control Structure:

- The control structure of the pond regulates pond drainage through the principal spillway. Control structures come in many forms and include, but are not limited to, concrete risers, metal risers, and weir walls.
    - Concrete Risers are formed concrete boxes, which may contain at least three openings, one for the low flow intake, one for larger storm events, and one for the principal spillway pipe.
        - Maintenance on concrete risers consists of checking for and repairing any spalling (the flaking away of concrete) and the removal of rust from bolts attached to the riser. After the rust

has been removed, these bolts must be coated with a rust inhibiting paint or replaced with stainless steel bolts.

- Metal risers consist of two vertical metal cylinders, the main riser, and the anti-vortex top. One of the key issues with metal riser maintenance is the securing of the anti-vortex top to the main riser structure. These two parts should be joined so they do not move. Metal risers can consist of bituminous-coated galvanized steel and aluminum.
    - In the case of galvanized steel, a bituminous coating must be applied to the entire riser structure. This coating should be regularly monitored to ensure that the loss of the coating, or scaling, has not occurred. Aluminum risers do not need to be coated with the bituminous coating.
- Weir walls are walls that have a vertical opening and an orifice to allow water to drain from the pond. These walls can be made of a number of materials including, but not limited to, concrete and gabion baskets. Maintenance is simple on weir walls as the walls themselves only need to be checked for weeping and cracking.
- The majority of stormwater ponds will have a low flow device attached to the control structure. A low flow device allows for the drainage of water from the pond when the water level is very low. Low flow devices can have several functions. In dry ponds, the low flow device allows for the drainage of water in small storm events. In wet ponds, the low flow device is attached to a gate valve and can be opened to drain the pond for maintenance. Some low flows are a hole in the bottom of the riser with a trash rack bolted over it. In this case, the area in front of the low flow and the trash rack must be kept clear of debris and sediment. Some low flow devices are perforated pipes that extend from the front of the riser and are surrounded by a dewatering stone. Dewatering stone is #2 stone placed all around the low flow pipe. This dewatering stone must be kept clear of sediment and vegetation in order to function. If the dewatering stone is clogged with sediment, there will likely be a large quantity of vegetation present.
- Trash racks are on both the low flow device and the main riser. A trash rack is a coated metal rack that prevents large debris and trash form entering the control structure and principal spillway. These racks should be kept clear and rust free in the same way as bolts on concrete risers.

Barrel Outfall:

- The barrel outfall is the discharge point of the principal spillway. At the barrel outfall, there may be a concrete wall, a concrete flare end section, or a metal flare end section. Downstream of the flare end section there will be riprap to slow the flow of water leaving the principal spillway. The barrel outfall and riprap areas must be kept clear of vegetation and sediment so flow to the stream or storm drain is not impeded.

Storm Drain Outfall:

- Storm drain outfalls are very similar to barrel outfalls except a storm drain outfall brings water from the storm drain system to the pond. Like barrel outfalls, storm drain outfalls must be kept clear of vegetation and sediment.

Emergency Spillway:

- An emergency spillway is weir cut in grade on a stormwater pond dam and is lower than the top of the dam itself. The emergency spillway allows water to leave the pond without cresting over the dam in extreme storm events. Maintenance of an emergency spillway follows the same rules of the dam itself in that there should be a thorough vegetative cover over all portions of the emergency spillway, and there cannot be any woody vegetation on the emergency spillway.

Pilot Channel:

- A pilot channel is a channel that may exist between the storm drain outfall and the low flow device in a stormwater pond. Should a pond contain a pilot channel, the channel must be kept clear of any large woody vegetation so positive flow to the riser structure can be maintained.

Underground Storage Facility Maintenance

Inlet:

- Inlets must be kept clear of large debris or vegetation so as not to impede the flow of water into the facility.

Control Structure:

- Like ponds, most underground facilities will have a control structure consisting of a weir wall, and a low flow device.
- It is crucial to keep the upstream side of the control structure (the side opposite the low flow) free from trash and other debris so that positive flow to the outfall is maintained.

Outfall:

- If the underground facility discharges into a stream, it will have an outfall very similar to a stormwater management pond with a flare end section and riprap. Like a pond barrel outfall, a UGS outfall must be kept clear of vegetation and sediment so positive flow is not impeded.